

PATENT CLAIMS

1. A static micromixer with at least one mixing chamber and an upstream guide component for the separate admission of two different fluids to be mixed or to be dispersed, said component including slot-like channels extending at an angle with respect to the longitudinal axis of the micromixer, said channels intersecting each other without communicating and leading to a mixing chamber, where they form a common exit cross-section, with webs disposed between adjacent outlet channels at the exit side the height of the webs being less than 500  $\mu\text{m}$ , said channels in the guide component having, for at least a part of the fluid flows to be mixed, having a cross-section which decreases from the channel inlet sides continuously toward and up to the channel exit sides.

2. A micromixer according to claim 1, wherein said slot-like channels are provided over at least part of their length with webs oriented in flow direction.

3. A micromixer according to claim 1, wherein, in the direction of the flow, behind the outlet opening of the guide component, a grid, a net or an equally effective structure is provided which divides the flow.

4. A micromixer according to the claim 1, wherein said channels of the guide component are each formed individually into an electrically conductive base body by wire erosion, wherein the channels for each fluid flow are formed into the base body in the form of a ridge section and auxiliary cuts

which have been provided to facilitate the forming of the channels and which interconnect the channels are covered at the channel entrance sides and also at the channel exit sides by a plate.

5. A micromixer according to claim 1, wherein the guide component is manufactured by layered laser welding of metal powder, wherein the channel areas are not melted and are formed by subsequent removal of the powder which has not been melted.

6. A micromixer according to claim 1, wherein the guide component is manufactured from a plastic material by layered hardening of the plastic material by means of a laser stereo lithography procedure (Rapid prototyping), wherein the channel areas are not exposed to light and therefore are not hardened and are formed by subsequent removal of the non-exposed and non-hardened plastic material.

7. A micromixer according to claim 1, wherein the guide component is manufactured by layered laser sintering of ceramic powder, wherein the channel areas are not sintered and the channels are formed by subsequent removal of the non-sintered ceramic powder.

8. A micromixer according to claim 1, wherein the height of said webs is less than 150  $\mu\text{m}$ .